

CLAIMS

What is claimed is:

1. A connector for flexibly connecting adjacent first and second mat panels, with each mat panel having at least one hole near the edge abutting the adjacent mat panel, and said connector having at least one two-prong connector unit for interaction with said holes in said adjacent mat panels, each said two-prong connector unit comprising:
 - an upper member having a first end and a second end, wherein said upper member lies on the top of said adjacent first and second mat panels and spans the distance between the holes in said adjacent mat panels;
 - a first lower prong member having an inner end and an outer end, wherein said first lower prong member is sized to fit within the hole in said first adjacent mat panel;
 - a second lower prong member having an inner end and an outer end, wherein said second lower prong member is sized to fit within the hole in said second adjacent mat panel;
 - a first joining member connecting said first end of said upper member to said inner end of said first lower prong member, wherein said first joining member is sized to fit within the hole in said first adjacent mat panel;
 - a second joining member connecting said second end of said upper member to said inner end of said second lower member wherein said second

joining member is sized to fit within the hole in said second adjacent mat panel; and

wherein said upper member is substantially parallel to said first lower prong member and to said second lower prong member.

5 2. The connector of claim 1, wherein said at least one two-prong connector unit is joined in parallel to another two-prong connector unit by at least one spanning member that connects said upper members of each of said two-prong connector units.

 3. The connector of claim 2, wherein said upper members are parallel
10 and said lower prong members are in the same plane as one another.

 4. The connector of claim 1 or 2, wherein said first joining member is substantially parallel to said second joining member.

 5. The connector of claim 1 or 2, wherein the internal angle between said upper member and said first joining member is at least ninety degrees and
15 the internal angle between said upper member and said second joining member is at least ninety degrees.

 6. The connector of claim 1 or 2, wherein the internal angle between said upper member and said first joining member is less than ninety degrees and the internal angle between said upper member and said second joining
20 member is less than ninety degrees.

 7. The connector of claim 1, wherein
said upper member is about five inches in length;

said first and second lower prong members are each about two inches in length;

the distance from the bottom surface of each of said lower prong members to the top surface of said upper member is approximately one and
5 three quarters inches;

the length of said connector from the outer end of said first lower prong member to the outer edge of said second lower prong member is about eight inches; and

said upper member, said first and second lower prong members,
10 and said first and second joining members are comprised of one-half inch round rods.

8. The connector of claim 2, wherein

said upper member is about five inches in length;

said first and second lower prong members are each about two
15 inches in length;

the distance from the bottom surface of each of said lower prong members to the top surface of said upper member is approximately one and three quarters inches;

the length of said connector from the outer end of said first lower
20 prong member to the outer edge of said second lower prong member is about eight inches;

the length of each of said at least one spanning member between the inner sides of said respective joining members is about four inches; and

said upper member, said first and second lower prong members, said first and second joining members, and each of said at least one spanning members are comprised of one-half inch round rods.

9. The connector of claim 1, wherein said upper member, said first and second lower prong members, and said first and second joining members are comprised of a raw material selected from the group consisting of plywood, fiberglass, plastic, steel, metal sheets, one-half inch cold rolled steel, and metal panels.

10. The connector of claim 2, wherein said upper member, said first and second lower prong members, said first and second joining members, and said spanning member are comprised of a raw material selected from the group consisting of plywood, fiberglass, plastic, steel, metal sheets, one-half inch cold rolled steel, and metal panels.

11. The connector of claim 1 or 2, wherein said upper member, said first and second lower prong members, and said first and second joining members of said two-prong connector unit are formed from a single piece of material, said formation process involving the step of:

cutting a formable raw material to a desired length to yield said single piece of material of a desired length; and

forming said single piece of material into said upper member, said first and second lower members, and said first and second joining members.

12. The connector of claim 11, wherein said formation process is selected from the group consisting of bending, molding, sculpting, press forming, and casting.

13. The connector of claim 1 or 2, wherein each of said members is separately formed and joined together to form said connector.

14. The connector of claim 13, wherein each of said members is joined by a process selected from the group consisting of nailing, screwing, taping, adhering, welding, gluing, and hinging.

15. The connector of claim 12, wherein said at least one spanning member is connected to said upper members by a process selected from the group consisting of nailing, screwing, taping, adhering, welding, gluing, and hinging.

16. A system of flexibly securing adjacent mat panels comprising:
forming holes near the edges of said adjacent of mat panels; and
inserting a connector into said holes to flexibly secure adjacent mat panels, said connector having at least one two-prong connecting unit for insertion into said holes, said two-prong connector unit comprising:
an upper member having a first end and a second end, wherein said upper member lies on the top of said mat panels and spans the distance between the holes in said adjacent mat panels;

a first lower prong member having an inner end and an outer end,
wherein said first lower member is sized to fit within the hole in one of said
adjacent mat panels;

a second lower prong member having an inner end and an outer
5 end, wherein said second lower member is sized to fit within the hole in
another of said adjacent mat panels;

a first joining member connecting said first end of said upper
member to said inner end of said first lower prong member, wherein said first
joining member is sized to fit within the hole in one of said adjacent mat
10 panels;

a second joining member connecting said second end of said upper
member to said inner end of said second lower prong member, wherein said
second joining member is sized to fit within the hole in another of said adjacent
mat panels; and

15 wherein said upper member is substantially parallel to said first
lower prong member and to said second lower prong member.

17. The system of claim 16, wherein at least one two-prong connector
unit is joined in parallel to another two-prong connector unit by at least one
spanning member that connects said upper members of each of said two-prong
20 connector units, wherein said upper members are parallel and said lower prong
members are in the same plane as one another.

18. The system of claim 16, wherein

said upper member is about five inches in length;

said first and second lower prong members are each about two inches in length;

the distance from the bottom surface of each of said lower prong members to the top surface of said upper member is about one and three quarters inches in length;

the length of said connector from the outer edge of said first end of said first lower prong member to the outer edge of said second end of said second lower prong member is approximately eight inches; and

said upper member, said first and second lower prong members, and said first and second joining members are comprised of one-half inch round rods.

19. The system of claim 17, wherein

said upper member is about five inches in length;

said first and second lower prong members are each about two inches in length;

the distance from the bottom surface of each of said lower prong members to the top surface of said upper member is about one and three quarters inches in length;

the length of said connector from the outer edge of said first end of said first lower prong member to the outer edge of said second end of said second lower prong member is approximately eight inches;

the length of each of said at least one spanning member between the inner edges of said respective joining members is about four inches; and

said upper member, said first and second lower prong members, said at least one spanning member, and said first and second joining members
5 are comprised of one-half inch round rods.

20. The system of claim 16 or 17, wherein the internal angle between said upper member and said first joining member is at least ninety degrees and the internal angle between said upper member and said second joining member is at least ninety degrees.

10 21. The system of claim 16 or 17, wherein the internal angle between said upper member and said first joining member is less than ninety degrees and the internal angle between said upper member and said second joining member is less than ninety degrees.

22. The system of claim 16, wherein said upper member, said first and
15 second lower prong members, and said first and second joining members are comprised of a raw material selected from the group consisting of plywood, fiberglass, plastic, steel, metal sheets, one-half inch cold rolled steel, and metal panels.

23. The system of claim 17, wherein said upper member, said first and
20 second lower prong members, said first and second joining members, and said at least one spanning member are comprised of a raw material selected from

the group consisting of plywood, fiberglass, plastic, steel, metal sheets, one-half inch cold rolled steel, and metal panels.

24. The system of claim 16 or 17, wherein said upper member, said first and second lower prong members, and said first and second joining members of said two-prong connector unit are formed from a single piece of material, said formation process involving the step of:

cutting a formable raw material to a desired length to yield said single piece of material of a desired length; and

forming said single piece of material into said upper member, said first and second lower members, and said first and second joining members.

25. The system of claim 24, wherein said formation process is selected from the processes consisting of bending, molding, sculpting, press forming, and casting.

26. The system of claim 16 or 17, wherein each of said members is separately formed and joined together to form said connector.

27. The system of claim 26, wherein each of said members is joined by a process selected from the group consisting of nailing, screwing, taping, adhering, welding, gluing, and hinging.

28. The system of claim 25, wherein said at least one spanning member is connected to said upper members by a process selected from the group consisting of nailing, screwing, taping, adhering, welding, gluing, and hinging.

29. A two-prong connector for flexibly connecting adjacent first and second mat panels, with each mat panel having at least one hole near the edge abutting the adjacent mat panel, comprising:

an upper member having a first end and a second end;

5 a first lower prong member having an inner end and an outer end;

a second lower prong member having an inner end and an outer end;

a first joining member connecting said upper member's first end to said first lower prong member's inner end, wherein said upper member is substantially parallel to said first lower prong member and substantially perpendicular to said first joining member; and

a second joining member connecting said upper member's second end to said second lower prong member's inner end, wherein said upper member is substantially parallel to said second lower prong member and substantially perpendicular to said second joining member.

30. A four-prong connector for flexibly connecting at least adjacent first and second mat panels, with each mat panel having at least one hole near the edge abutting the adjacent mat panel, comprising:

a first upper member having a first end and a second end;

20 a first lower prong member having an inner end and an outer end;

a second lower prong member having an inner end and an outer end;

a first joining member connecting said first upper member's first end to said first lower prong member's inner end, wherein said upper member is substantially parallel to said first lower prong member and substantially perpendicular to said first joining member;

5 a second joining member connecting said first upper member's second end to said second lower prong member's inner end, wherein said first upper member is substantially parallel to said second lower prong member and substantially perpendicular to said second joining member;

a second upper member having a first end and a second end;

10 a third lower prong member having an inner end and an outer end;
a fourth lower prong member having an inner end and an outer end;

a third joining member connecting said second upper member's first end to said third lower prong member's inner end, wherein said second
15 upper member is substantially parallel to said third lower prong member and substantially perpendicular to said third joining member;

a fourth joining member connecting said second upper member's second end to said fourth lower prong member's inner end, wherein said second upper member is substantially parallel to said fourth lower prong
20 member and substantially perpendicular to said fourth joining member; and

at least one spanning member that connects said first upper member to said second upper member, wherein said first and second upper

members are parallel to one another and said first, second, third, and fourth lower prong members are in the same plane as one another.